SONY®

AUDIO D/A CONVERTER BOARD

BKPF-L752

MAINTENANCE MANUAL

1st Edition

Serial No. 10001 and Higher

⚠警告

このマニュアルは，サービス専用です。
お客様が，このマニュアルに記載された設置や保守，点検，修理などを行うと感電や火災，人身事故につながることがあります。
危険をさけるため，サービストレーニングを受けた技術者のみご使用ください。

⚠WARNING

This manual is intended for qualified service personnel only.
To reduce the risk of electric shock, fire or injury, do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so. Refer all servicing to qualified service personnel.

⚠WARNUNG

Die Anleitung ist nur für qualifiziertes Fachpersonal bestimmt.
Alle Wartungsarbeiten dürfen nur von qualifiziertem Fachpersonal ausgeführt werden. Um die Gefahr eines elektrischen Schlages, Feuergefahr und Verletzungen zu vermeiden, sind bei Wartungsarbeiten strikt die Angaben in der Anleitung zu befolgen. Andere als die angegeben Wartungsarbeiten dürfen nur von Personen ausgeführt werden, die eine spezielle Befähigung dazu besitzen.

⚠AVERTISSEMENT

Ce manual est destiné uniquement aux personnes compétentes en charge de l’entretien. Afin de réduire les risques de décharge électrique, d’incendie ou de blessure n’effectuer que les réparations indiquées dans le mode d’emploi à moins d’être qualifié pour en effectuer d’autres. Pour toute réparation faire appel à une personne compétente uniquement.

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Manual Structure

Purpose of this manual

This manual is the maintenance manual of Audio D/A Converter Board BKPF-L752.
This manual is intended for use by trained system and service engineers, and describes the information for periodic maintenance and detailed service.

Contents

This manual is organized by following sections.

Section 1 Service Overview
This section explains the notes on repair parts and IC link replacement.

Section 2 Electrical Alignment
This section explains the adjustment after replacing part.

Section 3 Spare Parts
This section describes the spare parts.

Section 4 Semiconductor Pin Assignments
This section describes the pin assignments of semiconductor.

Section 5 Block Diagram
This section describes the overall block diagram.

Section 6 Schematic Diagrams
This section describes the schematic diagrams of the DAC-38 and CN-1858/1859 boards.

Section 7 Board Layout
This section describes the board layout for the DAC-38 board.

Related manuals

The following manual is prepared for this unit.

- **Installation Manual (Supplied with BKPF-L752)**
  This manual describes the information on BKPF-L752 installing.

Section 1
Service Overview

1-1. Notes on Repair Parts

1. Safety Related Components Warning

WARNING

Components marked ⚠ are critical to safe operation. Therefore, specified parts should be used in the case of replacement.

2. Standardization of Parts

Some repair parts supplied by Sony differ from those used for the unit. These are because of parts commonality and improvement.
Parts list has the present standardized repair parts.

3. Stock of Parts

Parts marked with “o” at SP (Supply code) column of the spare parts list may not be stocked. Therefore, the delivery date will be delayed.

4. Units Representation

The following represented units are changed or omitted in writing.

	Units	Representation
Capacitance	μF	uF
Inductance	μH	uH
Resistance	Ω	Abbreviation

Note

For the replacement of the DAC-38 board, please buy BKPF-L752 because DAC-38 mounted circuit board is not prepared for spare parts.

1-2. IC Link Replacement

WARNING

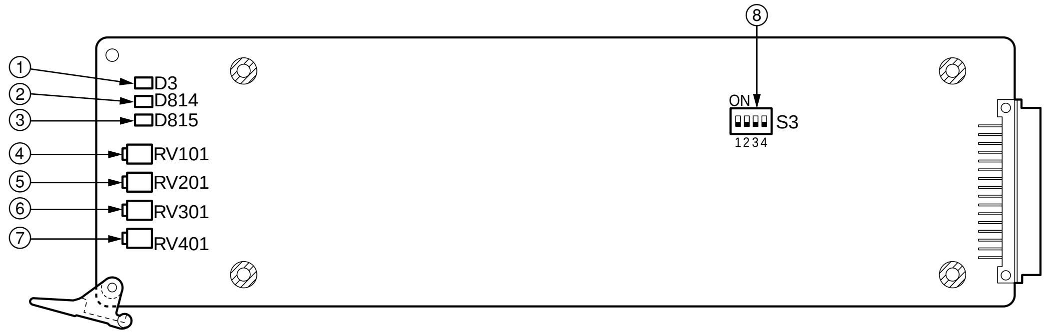
An IC link is critical parts to safe operation.
Replace this component with Sony parts whose part numbers appear in this manual published by Sony.
If not, this may cause a fire or electric shock.
Be sure to use the specified component in this manual.

The IC link is mounted on the DAC-38 board. Be sure to replace with the specified IC link as shown below after removing the foreign substances that may cause the shorts.

DAC-38 Board

Ref No. (Address)	Description	Part No.
PS1 (H-3)	IC link 2 A	⚠1-533-282-21

1-3. Name and Function of Switch/Indicator/etc.



Main Board (DAC-38 Board: Side A)

Switches/gain adjusting VRs (Factory default settings are indicated by a ■ mark)

No.	Ref. No.	Name	Function
⑧	S3	Setting switch	
	S3-1	TEST 1	ON: Test mode (Factory use) ■ OFF: Normal mode
	S3-2	TEST 2	ON: Test mode (Factory use) ■ OFF: Normal mode
	S3-3	AES/EBU 1 DE-EMPHASIS	ON: When the de-emphasis is on for the signals input to the AES/EBU IN 1 connector ■ OFF: When the de-emphasis is off for ones
	S3-4	AES/EBU 2 DE-EMPHASIS	ON: When the de-emphasis is on for the signals input to the AES/EBU IN 2 connector ■ OFF: When the de-emphasis is off for ones
④ ⑤ ⑥ ⑦	RV405 RV406 RV407 RV408	CH1 GAIN CH2 GAIN CH3 GAIN CH4 GAIN	Adjusts the audio output level of the each channel within the range between −14 dB (−10 dBm output) and +4 dB (+8 dBm output) at −20 dB FS input. **Note** At the factory-out, they were adjusted so as to convert a digital audio signal −20 dB FS into an analog audio signal +4 dBm.

Indicators

No.	Ref. No.	Name	Color	Function
①	D3	POWER (±12 V)	Green/red	Green: A power of ±12 V is normal Red: A power of ±12 V is abnormal
②	D814	AES/EBU 1 IN	Green/red	Green: When a digital audio signal is input to the AES/EBU IN 1 connector Red: When no signal is normally input to the AES/EBU IN 1 connector (including the case where no signal is input)
③	D815	AES/EBU 2 IN	Green/red	Green: When a digital audio signal is input to the AES/EBU IN 2 connector Red: When no signal is normally input to the AES/EBU IN 2 connector (including the case where no signal is input)

Section 2
Electrical Alignment

2-1. Electrical Alignment Overview

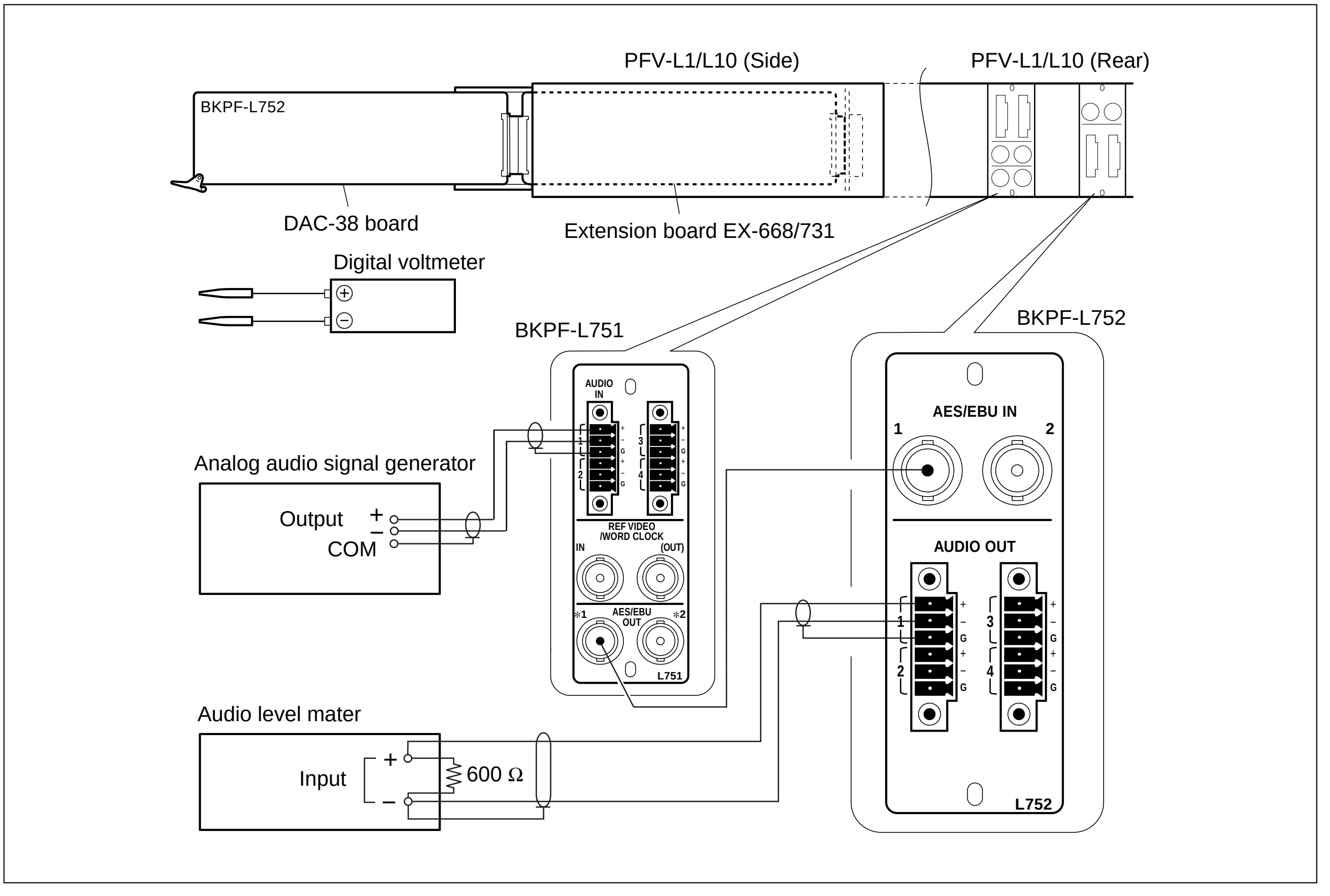
2-1-1. Required Equipment and Tools

Use the equipment listed below or the equivalent.

Item	Model	Remarks
Extension board	EX-668 (Part No. A-8318-552-A)	For PFV-L1
	EX-731 (Part No. A-8322-598-A)	For PFV-L10
Analog audio signal generator ∗	SG505 (Option 02)	
Audio level meter ∗	—	
Interface unit	Sony PFV-L1 or PFV-L10	
Audio A/D converter board ∗	Sony BKPF-L751	Factory default condition
Digital voltmetor ∗	—	
Adjustment screwdriver	—	Insulation type
Resister (600 Ω , within 1 %)		with lead

∗: Use the equipment after calibration has been completed.

2-1-2. Connection

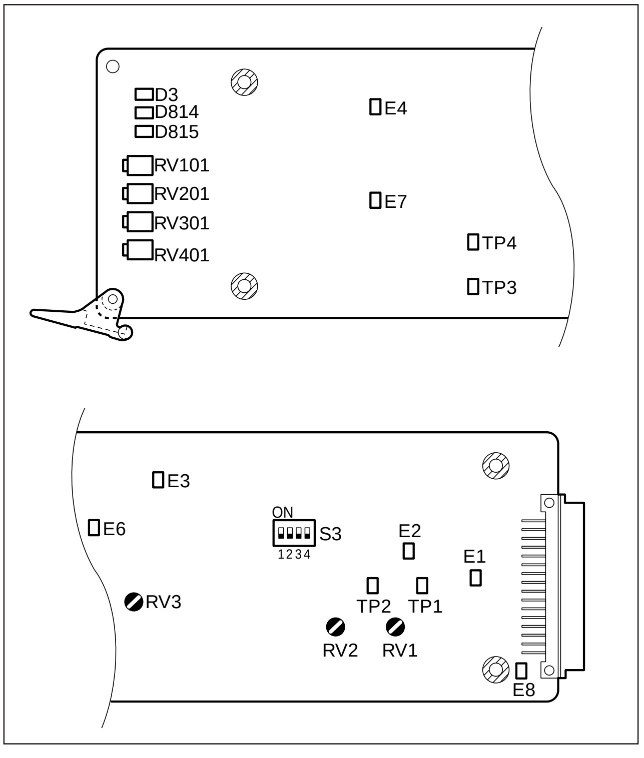


2-2. Preparation for Adjustment

1. Extend the DAC-38 board with a extension board.
2. Write down the customer settings of the switch (S3) on the DAC-38 board in following table.
3. Set the switch S3 as follows:

Ref. No. (Address)		Setting at adj.	Customer setting
S3 (F-1)	No. 1:	OFF	OFF
	No. 2:	OFF	OFF
	No. 3:	OFF	
	No. 4:	OFF	

4. Install the main board (ADC-40 board) of the audio A/D converter board (BKPF-L751's audio input/output gain in a factory default condition) to the interface unit.
   Factory default condition (RV405, 406, 407, 408/ADC-40 board):
   Each VR was completed the adjustment so as to convert a +4.0 dBm to −20 dB FS.
5. Install the connector panel of the audio A/D converter board (BKPF-L751) to the interface unit after setting the LOOP/WORD switch to WORD CLK OUT (upper position).
6. Turn on the power of equipment, and warm up them for about ten minutes.



DAC-38 Board (Side A)

2-3. Power Supply Voltage Adjustment

Measuring equipment: Digital voltmeter

1. Set the digital voltmeter as follows:
   Range: AUTO
   Mode: DC V

+5 V adjustment for Analog line

2. Connect the probe of the digital voltmeter as follows:
   +: TP1/DAC-38 (G-2)
   −: E7/DAC-38 (C-2)
3. Adjust the voltage on the digital voltmeter.
   Adjustment point: RV1/DAC-38 (G-2)
   Specification: 4.75 ±0.05 V dc

+5 V adjustment for Digital line

4. Connect the probe of the digital voltmeter as follows:
   +: TP2/DAC-38 (F-2)
   −: E2/DAC-38 (F-2)
5. Adjust the voltage.
   Adjustment point: RV2/DAC-38 (F-2)
   Specification: 4.75 ±0.05 V dc

±12 V adjustment

6. Connect the probe of the digital voltmeter as follows:
   +: TP3/DAC-38 (D-3)
   −: TP4/DAC-38 (D-3)
7. Adjust the voltage.
   Adjustment point: RV3/DAC-38 (E-2)
   Specification: +25.10 ±0.05 V dc
8. Connect the probe of the digital voltmeter as follows:
   +: TP3/DAC-38 (D-3)
   −: E7/DAC-38 (C-2)
9. Check the voltage.
   Specification: +12.55 ±0.15 V dc
10. Connect the probe of the digital voltmeter as follows:
    +: E7/DAC-38 (C-2)
    −: TP4/DAC-38 (D-3)
11. Check the voltage.
    Specification: −12.55 ±0.15 V dc

Note

After adjusting the power supply voltage, be sure to perform "2-4. Input/Output Gain Adjustment".

2-4. Input/Output Gain Adjustment

The specification value described for this input/output gain adjustment is set when the gain is 0 dB (during factory setting). If the customized gain is other than 0 dB, increase or decrease the specification value proportionally to the difference of the gain.

Measuring equipment: Audio level meter

1. Set the output of the audio signal generator to +4.0 dBm, 1 kHz.

CH1 adjustment

2. Connect the generator to the CH1 input of AUIDO IN connector of the audio A/D converter board (BKPF-L751).
3. Connect the AES/EBU OUT1 connector of the audio A/D converter board (BKPF-L751) to the AES/EBU IN1 connector.
4. Connect the audio level meter to the CH1 output of AUDIO OUT connector.
5. Adjust the CH1 output level on the audio level meter.
   Adjustment point: ⊘RV101/DAC-38 (A-1)
   Specification: 4.0 ±0.1 dBm (at 600 Ω load)

CH2 adjustment

6. Connect the generator to the CH2 input of AUDIO IN connector of the audio A/D convertor board (BKPF-L751).
7. Connect the audio level meter to the CH2 output of AUDIO OUT connector.
8. Adjust the CH2 output level on the audio level meter.
   Adjustment point: ⊘RV201/DAC-38 (A-2)
   Specification: 4.0 ±0.1 dBm (at 600 Ω load)

CH3 adjustment

9. Connect the generator to the CH3 input of AUDIO IN connector of the audio A/D converter board (BKPF-L751).
10. Connect the AES/EBU OUT2 connector of the audio A/D converter board (BKPF-L751) to the AES/EBU IN2 connector.
11. Connect the audio level meter to the CH3 output of AUDIO OUT connector.
12. Adjust the CH3 output level on the audio level meter.
    Adjustment point: ⊘RV301/DAC-38 (A-2)
    Specification: 4.0 ±0.1 dBm (at 600 Ω load)

CH4 adjustment

13. Connect the generator to the CH4 input of AUDIO IN connector of the audio A/D converter board (BKPF-L751).
14. Connect the audio level meter to the CH4 output of AUDIO OUT connector.
15. Adjust the CH4 output level on the audio level meter.
    Adjustment point: ⊘RV401/DAC-38 (A-3)
    Specification: 4.0 ±0.1 dBm (at 600 Ω load)

16. After turning off the power, reset the switch (S3) on the DAC-38 board to the customer settings.

Note

0 dBm ≒ 0.775 V rms

Section 3
Spare Parts

CN-1858/1859 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	1-793-325-11	s	2-CONNECTOR, COAXIAL, BNC, FEMALE
1pc	3-202-613-01	o	PANEL (752), CN
1pc	3-686-054-02	o	STUD, SUPPORT, PC BOARD
3pcs	7-621-775-10	s	SCREW +B 2.6x4
1pc	7-688-002-11	s	WASHER 2.6, MIDDLE

The components in the connector panel assembly of BKPF-L752 are out of spare parts except above. When component replacement (except above) is required, replace by assembly (including CN-1858/1859 mounted circuit boards) below.

A-8322-766-A o CN PANEL (752) ASSY

DAC-38 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	1-251-047-11	s	SOCKET, IC (PLCC) 44P (for IC608)
1pc	3-179-084-01	s	LEVER (R), PC BOARD
or	3-179-085-01	s	LEVER (L), PC BOARD
2pcs	7-685-547-14	s	SCREW +BTP 3x10
C1	1-115-339-11	s	CERAMIC, CHIP 0.1uF 10% 50V (2012)
C2	1-115-339-11	s	CERAMIC, CHIP 0.1uF 10% 50V (2012)
C3	1-126-393-11	s	ELECT, CHIP 33uF 20% 10V
C4	1-164-346-11	s	CERAMIC, CHIP 1.0uF 16V (2012)
C6	1-115-339-11	s	CERAMIC, CHIP 0.1uF 10% 50V (2012)
C7	1-115-339-11	s	CERAMIC, CHIP 0.1uF 10% 50V (2012)
C8	1-163-809-11	s	CERAMIC, CHIP 0.047uF 10% 25V(2012)
C9	1-126-394-11	s	ELECT, CHIP 10uF 20% 16V
C10	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V (2012)
C11	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V (2012)
C12	1-126-394-11	s	ELECT, CHIP 10uF 20% 16V
C13	1-115-339-11	s	CERAMIC, CHIP 0.1uF 10% 50V (2012)
C14	1-115-339-11	s	CERAMIC, CHIP 0.1uF 10% 50V (2012)
C15	1-163-003-11	s	CERAMIC, CHIP 330pF 10% 50V (2012)
C16	1-115-339-11	s	CERAMIC, CHIP 0.1uF 10% 50V (2012)
C17	1-115-339-11	s	CERAMIC, CHIP 0.1uF 10% 50V (2012)
C18	1-163-809-11	s	CERAMIC, CHIP 0.047uF 10% 25V(2012)
C19	1-126-394-11	s	ELECT, CHIP 10uF 20% 16V
C20	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V (2012)
C21	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V (2012)
C22	1-126-394-11	s	ELECT, CHIP 10uF 20% 16V
C23	1-163-003-11	s	CERAMIC, CHIP 330pF 10% 50V (2012)
C103	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V (2012)
C104	1-163-251-11	s	CERAMIC, CHIP 100pF 5% 50V (2012)
C105	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V (2012)
C107	1-104-545-11	s	FILM, CHIP 0.0033uF 5% 16V (2012)
C108	1-104-545-11	s	FILM, CHIP 0.0033uF 5% 16V (2012)
C109	1-126-394-11	s	ELECT, CHIP 10uF 20% 16V
C110	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V (2012)
C112	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V (2012)
C113	1-104-545-11	s	FILM, CHIP 0.0033uF 5% 16V (2012)
C114	1-163-259-11	s	CERAMIC, CHIP 220pF 5% 50V (2012)
C116	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V (2012)
C118	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V (2012)
C119	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V (2012)
C120	1-126-396-11	s	ELECT, CHIP 47uF 20% 16V
C121	1-126-396-11	s	ELECT, CHIP 47uF 20% 16V
C122	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V (2012)
C123	1-128-398-11	s	ELECT 220uF 20% 16V
C124	1-128-398-11	s	ELECT 220uF 20% 16V
C203	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V (2012)
C204	1-163-251-11	s	CERAMIC, CHIP 100pF 5% 50V (2012)
C205	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V (2012)
C207	1-104-545-11	s	FILM, CHIP 0.0033uF 5% 16V (2012)
C208	1-104-545-11	s	FILM, CHIP 0.0033uF 5% 16V (2012)
C210	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V (2012)
C211	1-126-394-11	s	ELECT, CHIP 10uF 20% 16V
C212	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V (2012)
C213	1-104-545-11	s	FILM, CHIP 0.0033uF 5% 16V (2012)
C214	1-163-259-11	s	CERAMIC, CHIP 220pF 5% 50V (2012)
C219	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V (2012)
C220	1-126-396-11	s	ELECT, CHIP 47uF 20% 16V

(DAC-38 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
C221	1-126-396-11	s	ELECT, CHIP 47uF 20% 16V
C222	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V (2012)
C223	1-128-398-11	s	ELECT 220uF 20% 16V
C224	1-128-398-11	s	ELECT 220uF 20% 16V
C303	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V (2012)
C304	1-163-251-11	s	CERAMIC, CHIP 100pF 5% 50V (2012)
C305	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V (2012)
C307	1-104-545-11	s	FILM, CHIP 0.0033uF 5% 16V (2012)
C308	1-104-545-11	s	FILM, CHIP 0.0033uF 5% 16V (2012)
C309	1-126-394-11	s	ELECT, CHIP 10uF 20% 16V
C310	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V (2012)
C312	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V (2012)
C313	1-104-545-11	s	FILM, CHIP 0.0033uF 5% 16V (2012)
C314	1-163-259-11	s	CERAMIC, CHIP 220pF 5% 50V (2012)
C316	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V (2012)
C318	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V (2012)
C319	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V (2012)
C320	1-126-396-11	s	ELECT, CHIP 47uF 20% 16V
C321	1-126-396-11	s	ELECT, CHIP 47uF 20% 16V
C322	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V (2012)
C323	1-128-398-11	s	ELECT 220uF 20% 16V
C324	1-128-398-11	s	ELECT 220uF 20% 16V
C330	1-126-394-11	s	ELECT, CHIP 10uF 20% 16V
C403	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V (2012)
C404	1-163-251-11	s	CERAMIC, CHIP 100pF 5% 50V (2012)
C405	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V (2012)
C407	1-104-545-11	s	FILM, CHIP 0.0033uF 5% 16V (2012)
C408	1-104-545-11	s	FILM, CHIP 0.0033uF 5% 16V (2012)
C409	1-126-394-11	s	ELECT, CHIP 10uF 20% 16V
C410	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V (2012)
C411	1-126-394-11	s	ELECT, CHIP 10uF 20% 16V
C412	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V (2012)
C413	1-104-545-11	s	FILM, CHIP 0.0033uF 5% 16V (2012)
C414	1-163-259-11	s	CERAMIC, CHIP 220pF 5% 50V (2012)
C419	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V (2012)
C420	1-126-396-11	s	ELECT, CHIP 47uF 20% 16V
C421	1-126-396-11	s	ELECT, CHIP 47uF 20% 16V
C422	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V (2012)
C423	1-128-398-11	s	ELECT 220uF 20% 16V
C424	1-128-398-11	s	ELECT 220uF 20% 16V
C501	1-126-396-11	s	ELECT, CHIP 47uF 20% 16V
C502	1-115-339-11	s	CERAMIC, CHIP 0.1uF 10% 50V (2012)
C503	1-126-396-11	s	ELECT, CHIP 47uF 20% 16V
C504	1-115-339-11	s	CERAMIC, CHIP 0.1uF 10% 50V (2012)
C505	1-126-396-11	s	ELECT, CHIP 47uF 20% 16V
C506	1-115-339-11	s	CERAMIC, CHIP 0.1uF 10% 50V (2012)
C507	1-126-396-11	s	ELECT, CHIP 47uF 20% 16V
C508	1-115-339-11	s	CERAMIC, CHIP 0.1uF 10% 50V (2012)
C509	1-126-396-11	s	ELECT, CHIP 47uF 20% 16V
C510	1-126-396-11	s	ELECT, CHIP 47uF 20% 16V
C511	1-126-396-11	s	ELECT, CHIP 47uF 20% 16V
C512	1-115-339-11	s	CERAMIC, CHIP 0.1uF 10% 50V (2012)
C514	1-115-339-11	s	CERAMIC, CHIP 0.1uF 10% 50V (2012)
C516	1-115-339-11	s	CERAMIC, CHIP 0.1uF 10% 50V (2012)
C518	1-115-339-11	s	CERAMIC, CHIP 0.1uF 10% 50V (2012)
C519	1-126-396-11	s	ELECT, CHIP 47uF 20% 16V
C520	1-126-396-11	s	ELECT, CHIP 47uF 20% 16V
C521	1-126-395-11	s	ELECT, CHIP 22uF 20% 16V
C522	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V (2012)
C523	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V (2012)

(DAC-38 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
C524	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V (2012)
C525	1-126-395-11	s	ELECT, CHIP 22uF 20% 16V
C526	1-126-394-11	s	ELECT, CHIP 10uF 20% 16V
C528	1-126-396-11	s	ELECT, CHIP 47uF 20% 16V
C530	1-126-394-11	s	ELECT, CHIP 10uF 20% 16V
C535	1-126-394-11	s	ELECT, CHIP 10uF 20% 16V
C536	1-126-395-11	s	ELECT, CHIP 22uF 20% 16V
C537	1-126-395-11	s	ELECT, CHIP 22uF 20% 16V
C601	1-115-339-11	s	CERAMIC, CHIP 0.1uF 10% 50V (2012)
C602	1-115-339-11	s	CERAMIC, CHIP 0.1uF 10% 50V (2012)
C603	1-115-339-11	s	CERAMIC, CHIP 0.1uF 10% 50V (2012)
C604	1-115-339-11	s	CERAMIC, CHIP 0.1uF 10% 50V (2012)
C605	1-115-339-11	s	CERAMIC, CHIP 0.1uF 10% 50V (2012)
C610	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V (2012)
C701	1-109-892-11	s	ELECT, CHIP 47uF 20% 25V
C702	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V (2012)
C703	1-109-892-11	s	ELECT, CHIP 47uF 20% 25V
C704	1-109-892-11	s	ELECT, CHIP 47uF 20% 25V
C705	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V (2012)
C706	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V (2012)
C707	1-126-401-11	s	ELECT, CHIP 1.0uF 20% 50V
C709	1-109-892-11	s	ELECT, CHIP 47uF 20% 25V
C710	1-109-892-11	s	ELECT, CHIP 47uF 20% 25V
C712	1-109-892-11	s	ELECT, CHIP 47uF 20% 25V
C713	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V (2012)
C714	1-126-394-11	s	ELECT, CHIP 10uF 20% 16V
C715	1-126-394-11	s	ELECT, CHIP 10uF 20% 16V
C716	1-162-891-11	s	CERAMIC 1000pF 10% 50V
C717	1-162-891-11	s	CERAMIC 1000pF 10% 50V
C718	1-128-391-11	s	ELECT, CHIP 330uF 20% 6.3V
C719	1-128-391-11	s	ELECT, CHIP 330uF 20% 6.3V
C720	1-115-339-11	s	CERAMIC, CHIP 0.1uF 10% 50V (2012)
C721	1-115-339-11	s	CERAMIC, CHIP 0.1uF 10% 50V (2012)
C722	1-109-892-11	s	ELECT, CHIP 47uF 20% 25V
C723	1-109-892-11	s	ELECT, CHIP 47uF 20% 25V
CN1	1-506-746-11	s	CONNECTOR, DIN 48P, MALE
CN3	1-506-472-11	s	CONNECTOR, 7P, MALE
D1	8-719-987-69	s	DIODE DAN217
D2	8-719-987-69	s	DIODE DAN217
D3	8-719-027-84	s	LED CL-155UR/G-D, RED/GRN
D101	8-719-016-74	s	DIODE 1SS352
D201	8-719-016-74	s	DIODE 1SS352
D301	8-719-016-74	s	DIODE 1SS352
D401	8-719-016-74	s	DIODE 1SS352
D501	8-719-800-76	s	DIODE 1SS226
D502	8-719-800-76	s	DIODE 1SS226
D503	8-719-800-76	s	DIODE 1SS226
D504	8-719-800-76	s	DIODE 1SS226
D505	8-719-800-76	s	DIODE 1SS226
D506	8-719-800-76	s	DIODE 1SS226
D507	8-719-800-76	s	DIODE 1SS226
D508	8-719-800-76	s	DIODE 1SS226
D511	8-719-800-76	s	DIODE 1SS226
D512	8-719-941-09	s	DIODE DAP202U
D513	8-719-941-09	s	DIODE DAP202U
D814	8-719-027-84	s	LED CL-155UR/G-D, RED/GRN
D815	8-719-027-84	s	LED CL-155UR/G-D, RED/GRN
DD701	1-418-402-11	s	CONVERTER UNIT, DC-DC

Ref. No. or Q'ty	Part No.	SP	Description
FL1	1-239-898-22	s	FILTER, EMI, CHIP (2012)
FL2	1-233-313-31	s	FILTER, EMI, CHIP (3225)
FL3	1-239-898-22	s	FILTER, EMI, CHIP (2012)
FL4	1-239-895-11	s	FILTER, EMI, CHIP (2012)
FL5	1-239-895-11	s	FILTER, EMI, CHIP (2012)
FL6	1-239-895-11	s	FILTER, EMI, CHIP (2012)
FL7	1-239-895-11	s	FILTER, EMI, CHIP (2012)
FL9	1-239-895-11	s	FILTER, EMI, CHIP (2012)
FL10	1-239-895-11	s	FILTER, EMI, CHIP (2012)
FL11	1-239-895-11	s	FILTER, EMI, CHIP (2012)
FL12	1-239-895-11	s	FILTER, EMI, CHIP (2012)
IC1	8-759-355-06	s	IC CS8412-CS
IC2	8-759-355-06	s	IC CS8412-CS
IC3	8-759-177-02	s	IC NJM2267M
IC4	8-759-095-59	s	IC M5237ML
IC5	8-759-095-59	s	IC M5237ML
IC101	8-759-981-48	s	IC TL082M
IC102	8-759-981-48	s	IC TL082M
IC103	8-759-981-48	s	IC TL082M
IC104	8-759-158-99	s	IC SSM-2142P
IC201	8-759-981-48	s	IC TL082M
IC202	8-759-981-48	s	IC TL082M
IC204	8-759-158-99	s	IC SSM-2142P
IC301	8-759-981-48	s	IC TL082M
IC302	8-759-981-48	s	IC TL082M
IC303	8-759-981-48	s	IC TL082M
IC304	8-759-158-99	s	IC SSM-2142P
IC401	8-759-981-48	s	IC TL082M
IC402	8-759-981-48	s	IC TL082M
IC404	8-759-158-99	s	IC SSM-2142P
IC501	8-759-531-50	s	IC PCM1716E-B
IC502	8-759-531-50	s	IC PCM1716E-B
IC505	8-759-989-91	s	IC TL7705ACPS
IC601	8-759-990-63	s	IC PCF8574AT
IC606	8-759-523-81	s	IC TC74VHC08FT(EL)
IC608	8-759-594-98	o	IC 7032-DAC38-V1.00, PLD
L1	1-424-643-11	s	COIL, CHOKE 10uH
L2	1-424-643-11	s	COIL, CHOKE 10uH
L3	1-424-643-11	s	COIL, CHOKE 10uH
L4	1-424-643-11	s	COIL, CHOKE 10uH
L5	1-410-730-11	s	INDUCTOR, CHIP 0.12uH (3225)
L6	1-410-730-11	s	INDUCTOR, CHIP 0.12uH (3225)
PS1 ⚠	1-533-282-21	s	LINK, IC, CHIP 2A
Q1	8-729-808-68	s	TRANSISTOR 2SB1204S-FA
Q2	8-729-808-68	s	TRANSISTOR 2SB1204S-FA
Q3	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q4	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q6	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q8	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q9	8-729-900-53	s	TRANSISTOR DTC114EK
Q10	8-729-027-23	s	TRANSISTOR DTA114EKA-TI46
Q11	8-729-900-53	s	TRANSISTOR DTC114EK
Q12	8-729-027-23	s	TRANSISTOR DTA114EKA-TI46
Q501	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q502	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q503	8-729-929-02	s	TRANSISTOR DTC124XE
Q505	8-729-140-75	s	TRANSISTOR 2SD999-CLOCK
Q506	8-729-040-87	s	TRANSISTOR 2SJ463A

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Ref. No. or Q'ty	Part No.	SP	Description
Q507	8-729-028-91	s	TRANSISTOR DTA144EUA
Q508	8-729-040-87	s	TRANSISTOR 2SJ463A
Q509	8-729-040-87	s	TRANSISTOR 2SJ463A
Q510	8-729-040-87	s	TRANSISTOR 2SJ463A
Q511	8-729-028-91	s	TRANSISTOR DTA144EUA
R1	1-216-624-11	s	METAL, CHIP 75 0.5% 1/10W (2012)
R2	1-216-651-11	s	METAL, CHIP 1.0K 0.5% 1/10W (2012)
R3	1-216-603-11	s	METAL, CHIP 10 0.5% 1/10W (2012)
R4	1-216-655-11	s	METAL, CHIP 1.5K 0.5% 1/10W (2012)
R5	1-216-675-11	s	METAL, CHIP 10K 0.5% 1/10W (2012)
R6	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W (2012)
R7	1-216-651-11	s	METAL, CHIP 1.0K 0.5% 1/10W (2012)
R9	1-216-619-11	s	METAL, CHIP 47 0.5% 1/10W (2012)
R10	1-216-624-11	s	METAL, CHIP 75 0.5% 1/10W (2012)
R11	1-216-651-11	s	METAL, CHIP 1.0K 0.5% 1/10W (2012)
R12	1-216-655-11	s	METAL, CHIP 1.5K 0.5% 1/10W (2012)
R13	1-216-675-11	s	METAL, CHIP 10K 0.5% 1/10W (2012)
R14	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W (2012)
R15	1-216-651-11	s	METAL, CHIP 1.0K 0.5% 1/10W (2012)
R16	1-216-672-11	s	METAL, CHIP 7.5K 0.5% 1/10W (2012)
R17	1-216-619-11	s	METAL, CHIP 47 0.5% 1/10W (2012)
R18	1-216-619-11	s	METAL, CHIP 47 0.5% 1/10W (2012)
R19	1-216-619-11	s	METAL, CHIP 47 0.5% 1/10W (2012)
R20	1-216-619-11	s	METAL, CHIP 47 0.5% 1/10W (2012)
R21	1-216-619-11	s	METAL, CHIP 47 0.5% 1/10W (2012)
R22	1-216-619-11	s	METAL, CHIP 47 0.5% 1/10W (2012)
R23	1-216-619-11	s	METAL, CHIP 47 0.5% 1/10W (2012)
R24	1-216-619-11	s	METAL, CHIP 47 0.5% 1/10W (2012)
R25	1-216-690-11	s	METAL, CHIP 43K 0.5% 1/10W (2012)
R101	1-216-673-11	s	METAL, CHIP 8.2K 0.5% 1/10W (2012)
R104	1-216-683-11	s	METAL, CHIP 22K 0.5% 1/10W (2012)
R105	1-216-653-11	s	METAL, CHIP 1.2K 0.5% 1/10W (2012)
R106	1-216-653-11	s	METAL, CHIP 1.2K 0.5% 1/10W (2012)
R107	1-216-653-11	s	METAL, CHIP 1.2K 0.5% 1/10W (2012)
R108	1-216-653-11	s	METAL, CHIP 1.2K 0.5% 1/10W (2012)
R109	1-216-675-11	s	METAL, CHIP 10K 0.5% 1/10W (2012)
R110	1-216-677-11	s	METAL, CHIP 12K 0.5% 1/10W (2012)
R111	1-216-663-11	s	METAL, CHIP 3.3K 0.5% 1/10W (2012)
R112	1-216-655-11	s	METAL, CHIP 1.5K 0.5% 1/10W (2012)
R113	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W (2012)
R114	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W (2012)
R115	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W (2012)
R116	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W (2012)
R117	1-216-683-11	s	METAL, CHIP 22K 0.5% 1/10W (2012)
R201	1-216-673-11	s	METAL, CHIP 8.2K 0.5% 1/10W (2012)
R205	1-216-653-11	s	METAL, CHIP 1.2K 0.5% 1/10W (2012)
R206	1-216-653-11	s	METAL, CHIP 1.2K 0.5% 1/10W (2012)
R207	1-216-653-11	s	METAL, CHIP 1.2K 0.5% 1/10W (2012)
R208	1-216-653-11	s	METAL, CHIP 1.2K 0.5% 1/10W (2012)
R209	1-216-675-11	s	METAL, CHIP 10K 0.5% 1/10W (2012)
R211	1-216-663-11	s	METAL, CHIP 3.3K 0.5% 1/10W (2012)
R212	1-216-655-11	s	METAL, CHIP 1.5K 0.5% 1/10W (2012)
R213	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W (2012)
R214	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W (2012)
R215	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W (2012)
R216	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W (2012)
R217	1-216-683-11	s	METAL, CHIP 22K 0.5% 1/10W (2012)
R301	1-216-673-11	s	METAL, CHIP 8.2K 0.5% 1/10W (2012)
R304	1-216-683-11	s	METAL, CHIP 22K 0.5% 1/10W (2012)
R305	1-216-653-11	s	METAL, CHIP 1.2K 0.5% 1/10W (2012)

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Ref. No. or Q'ty	Part No.	SP	Description
R306	1-216-653-11	s	METAL, CHIP 1.2K 0.5% 1/10W (2012)
R307	1-216-653-11	s	METAL, CHIP 1.2K 0.5% 1/10W (2012)
R308	1-216-653-11	s	METAL, CHIP 1.2K 0.5% 1/10W (2012)
R309	1-216-675-11	s	METAL, CHIP 10K 0.5% 1/10W (2012)
R310	1-216-677-11	s	METAL, CHIP 12K 0.5% 1/10W (2012)
R311	1-216-663-11	s	METAL, CHIP 3.3K 0.5% 1/10W (2012)
R312	1-216-655-11	s	METAL, CHIP 1.5K 0.5% 1/10W (2012)
R313	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W (2012)
R314	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W (2012)
R315	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W (2012)
R316	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W (2012)
R317	1-216-683-11	s	METAL, CHIP 22K 0.5% 1/10W (2012)
R401	1-216-673-11	s	METAL, CHIP 8.2K 0.5% 1/10W (2012)
R404	1-216-683-11	s	METAL, CHIP 22K 0.5% 1/10W (2012)
R405	1-216-653-11	s	METAL, CHIP 1.2K 0.5% 1/10W (2012)
R406	1-216-653-11	s	METAL, CHIP 1.2K 0.5% 1/10W (2012)
R407	1-216-653-11	s	METAL, CHIP 1.2K 0.5% 1/10W (2012)
R408	1-216-653-11	s	METAL, CHIP 1.2K 0.5% 1/10W (2012)
R409	1-216-675-11	s	METAL, CHIP 10K 0.5% 1/10W (2012)
R411	1-216-663-11	s	METAL, CHIP 3.3K 0.5% 1/10W (2012)
R412	1-216-655-11	s	METAL, CHIP 1.5K 0.5% 1/10W (2012)
R413	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W (2012)
R414	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W (2012)
R415	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W (2012)
R416	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W (2012)
R417	1-216-683-11	s	METAL, CHIP 22K 0.5% 1/10W (2012)
R422	1-216-677-11	s	METAL, CHIP 12K 0.5% 1/10W (2012)
R423	1-216-683-11	s	METAL, CHIP 22K 0.5% 1/10W (2012)
R424	1-216-683-11	s	METAL, CHIP 22K 0.5% 1/10W (2012)
R425	1-216-651-11	s	METAL, CHIP 1.0K 0.5% 1/10W (2012)
R426	1-216-677-11	s	METAL, CHIP 12K 0.5% 1/10W (2012)
R427	1-216-675-11	s	METAL, CHIP 10K 0.5% 1/10W (2012)
R428	1-216-683-11	s	METAL, CHIP 22K 0.5% 1/10W (2012)
R429	1-216-683-11	s	METAL, CHIP 22K 0.5% 1/10W (2012)
R430	1-216-651-11	s	METAL, CHIP 1.0K 0.5% 1/10W (2012)
R431	1-216-677-11	s	METAL, CHIP 12K 0.5% 1/10W (2012)
R432	1-216-675-11	s	METAL, CHIP 10K 0.5% 1/10W (2012)
R502	1-216-699-11	s	METAL, CHIP 100K 0.5% 1/10W (2012)
R504	1-216-651-11	s	METAL, CHIP 1.0K 0.5% 1/10W (2012)
R505	1-216-675-11	s	METAL, CHIP 10K 0.5% 1/10W (2012)
R509	1-216-675-11	s	METAL, CHIP 10K 0.5% 1/10W (2012)
R510	1-216-675-11	s	METAL, CHIP 10K 0.5% 1/10W (2012)
R515	1-216-677-11	s	METAL, CHIP 12K 0.5% 1/10W (2012)
R516	1-216-683-11	s	METAL, CHIP 22K 0.5% 1/10W (2012)
R522	1-216-668-11	s	METAL, CHIP 5.1K 0.5% 1/10W (2012)
R523	1-216-683-11	s	METAL, CHIP 22K 0.5% 1/10W (2012)
R524	1-216-683-11	s	METAL, CHIP 22K 0.5% 1/10W (2012)
R525	1-216-651-11	s	METAL, CHIP 1.0K 0.5% 1/10W (2012)
R526	1-216-677-11	s	METAL, CHIP 12K 0.5% 1/10W (2012)
R527	1-216-675-11	s	METAL, CHIP 10K 0.5% 1/10W (2012)
R528	1-216-683-11	s	METAL, CHIP 22K 0.5% 1/10W (2012)
R529	1-216-683-11	s	METAL, CHIP 22K 0.5% 1/10W (2012)
R530	1-216-651-11	s	METAL, CHIP 1.0K 0.5% 1/10W (2012)
R531	1-216-677-11	s	METAL, CHIP 12K 0.5% 1/10W (2012)
R532	1-216-675-11	s	METAL, CHIP 10K 0.5% 1/10W (2012)
R533	1-216-677-11	s	METAL, CHIP 12K 0.5% 1/10W (2012)
R534	1-216-675-11	s	METAL, CHIP 10K 0.5% 1/10W (2012)
R601	1-216-699-11	s	METAL, CHIP 100K 0.5% 1/10W (2012)
R607	1-216-699-11	s	METAL, CHIP 100K 0.5% 1/10W (2012)
R608	1-216-699-11	s	METAL, CHIP 100K 0.5% 1/10W (2012)

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Ref. No. or Q'ty	Part No.	SP	Description
R609	1-216-699-11	s	METAL, CHIP 100K 0.5% 1/10W (2012)
R610	1-216-699-11	s	METAL, CHIP 100K 0.5% 1/10W (2012)
R709	1-216-635-11	s	METAL, CHIP 220 0.5% 1/10W (2012)
R710	1-216-635-11	s	METAL, CHIP 220 0.5% 1/10W (2012)
R711	1-216-679-11	s	METAL, CHIP 15K 0.5% 1/10W (2012)
R712	1-216-669-11	s	METAL, CHIP 5.6K 0.5% 1/10W (2012)
R713	1-216-679-11	s	METAL, CHIP 15K 0.5% 1/10W (2012)
R714	1-216-669-11	s	METAL, CHIP 5.6K 0.5% 1/10W (2012)
R717	1-216-627-11	s	METAL, CHIP 100 0.5% 1/10W (2012)
R718	1-216-627-11	s	METAL, CHIP 100 0.5% 1/10W (2012)
R719	1-216-687-11	s	METAL, CHIP 33K 0.5% 1/10W (2012)
R720	1-216-687-11	s	METAL, CHIP 33K 0.5% 1/10W (2012)
R721	1-216-679-11	s	METAL, CHIP 15K 0.5% 1/10W (2012)
R722	1-216-651-11	s	METAL, CHIP 1.0K 0.5% 1/10W (2012)
R723	1-216-675-11	s	METAL, CHIP 10K 0.5% 1/10W (2012)
R724	1-216-675-11	s	METAL, CHIP 10K 0.5% 1/10W (2012)
R725	1-216-651-11	s	METAL, CHIP 1.0K 0.5% 1/10W (2012)
R727	1-216-690-11	s	METAL, CHIP 43K 0.5% 1/10W (2012)
R827	1-216-691-11	s	METAL, CHIP 47K 0.5% 1/10W (2012)
R829	1-216-691-11	s	METAL, CHIP 47K 0.5% 1/10W (2012)
R830	1-216-691-11	s	METAL, CHIP 47K 0.5% 1/10W (2012)
R831	1-216-639-11	s	METAL, CHIP 330 0.5% 1/10W (2012)
R832	1-216-645-11	s	METAL, CHIP 560 0.5% 1/10W (2012)
R833	1-216-639-11	s	METAL, CHIP 330 0.5% 1/10W (2012)
R834	1-216-645-11	s	METAL, CHIP 560 0.5% 1/10W (2012)
R835	1-216-691-11	s	METAL, CHIP 47K 0.5% 1/10W (2012)
R836	1-216-619-11	s	METAL, CHIP 47 0.5% 1/10W (2012)
R837	1-216-619-11	s	METAL, CHIP 47 0.5% 1/10W (2012)
RB601	1-239-309-11	s	RES, NETWORK, CHIP 100Kx8 (6432)
RL101	1-755-145-11	s	RELAY TQ2SA-5V
RL201	1-755-145-11	s	RELAY TQ2SA-5V
RL301	1-755-145-11	s	RELAY TQ2SA-5V
RL401	1-755-145-11	s	RELAY TQ2SA-5V
RV1	1-237-033-11	s	RES, ADJ, CERMET 1K
RV2	1-237-033-11	s	RES, ADJ, CERMET 1K
RV3	1-237-037-11	s	RES, ADJ, CERMET 20K
RV101	1-230-749-21	s	RES, ADJ, CERMET 5K
RV201	1-230-749-21	s	RES, ADJ, CERMET 5K
RV301	1-230-749-21	s	RES, ADJ, CERMET 5K
RV401	1-230-749-21	s	RES, ADJ, CERMET 5K
S3	1-570-598-11	s	SWITCH, DIP 4-CKT
X1	1-760-954-11	s	OSCILLATOR, CRYSTAL 6.144 MHz

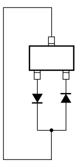
Section 4
Semiconductor Pin Assignments

ここに記載されている半導体は，それぞれの機能を等価的に表したものです。　なお，互換性のない型名を併記していることがありますので，部品を交換するときは，Spare Partsの章を参照してください。
等価回路はICメーカーのデータブックに従いました。

Semiconductors of which functions are equivalent are described here. For parts replacement, refer to the section of Spare Parts in this manual. The circuit diagram of each IC is obtained from the IC data book published by the manufacturer.

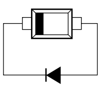
DIODE

—TOP VIEW—



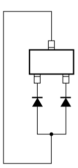
1SS226
1SS226-TE85L
DAN217
DAN217-T146

—TOP VIEW—



1SS352
1SS352-TPH3

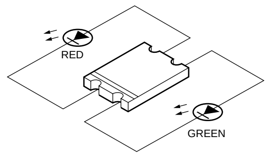
—TOP VIEW—



DAP202U
DAP202UT106

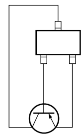
LED

CL-155UR/G-D
CL-155UR/G-DT

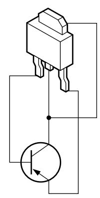


TRANSISTOR

—TOP VIEW—

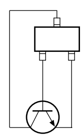


2SA1162G
2SA812-T1-M5M6



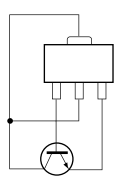
2SB1204S-FA
2SB1204S-FA-TL

—TOP VIEW—



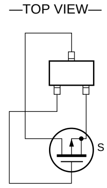
2SC1623
2SC1623-T1-L5L6

—TOP VIEW—



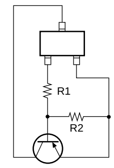
2SD999-CLCK
2SD999-T1CK

—TOP VIEW—



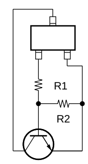
2SJ463A-T1

—TOP VIEW—



DTA114EKA
(R1=10k,R2=10k)
DTA114EKA-T146
DTA144EUA
(R1=47k,R2=47k)
DTA144EUA-T106

—TOP VIEW—

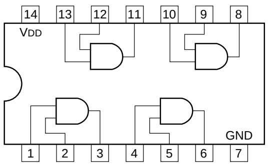


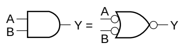
DTC114EKA
(R1=10k,R2=10k)
DTC114EKA-T146
DTC124XE
(R1=22k,R2=47k)
DTC124XE-TL

IC

TC74VHC08FT(EL) (TI)

C-MOS QUAD 2-INPUT AND GATES
—TOP VIEW—





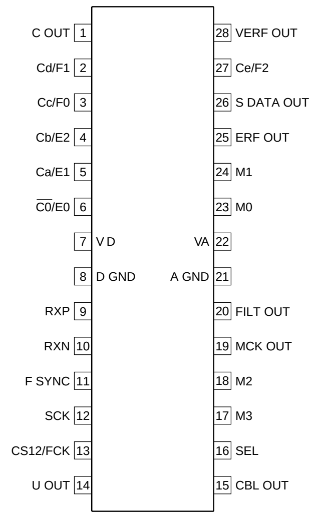
Y = A • B = $\overline{\overline{A}+\overline{B}}$

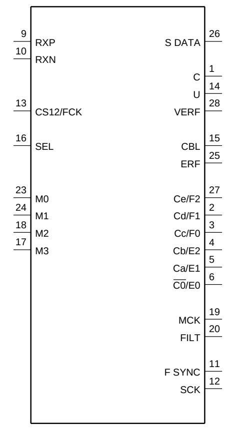
A	B	Y
0	0	0
0	1	0
1	0	0
1	1	1

0 : LOW LEVEL
1 : HIGH LEVEL

CS8412-CS (CRYSTAL)
CS8412-IS-E1 (CRYSTAL)
CS8412-IS-E2

DIGITAL AUDIO INTERFACE RECEIVER
—TOP VIEW—

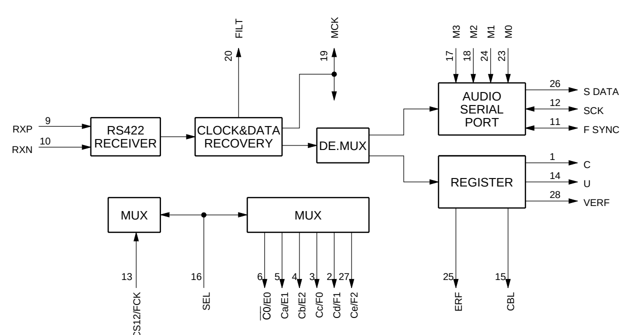




INPUT
RXP ; RECEIVE POSITIVE
RXN ; RECEIVE NEGATIVE
CS12/FCK ; CHANNEL SELECT/FCLOCK
SEL ; FREQUENCY/CS SELECT
M0 ; SERIAL PORT MODE SELECT0
M1 ; SERIAL PORT MODE SELECT1
M2 ; SERIAL PORT MODE SELECT2
M3 ; SERIAL PORT MODE SELECT3

OUT PUT
S DATA : SERIAL DATA
C : CHANNEL STATUS
U : USER DATA
VERF : VALIDITY + ERROR FLAG
CBL : CS BLOCK START
ERF : ERROR FLAG
Ce/F2 : CS e/FREQUENCY REPORT2
Cd/F1 : CS d/FREQUENCY REPORT1
Cc/F0 : CS c/FREQUENCY REPORT0
Cb/E2 : CS b/ERROR CONDITION2
Ca/E1 : CS a/ERROR CONDITION1
$\overline{C0}$/E0 : CS $\overline{0}$/ERROR CONDITION0
MCK : MASTER CLOCK
FILT : FILTER

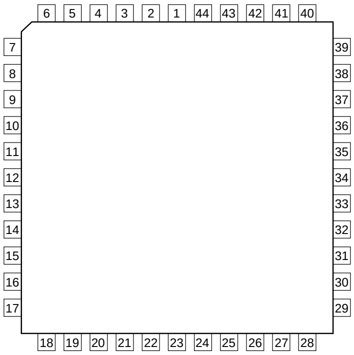
INPUT/OUTPUT
FSYNC : FRAME SYNC
SCK : SERIAL DATA CLOCK



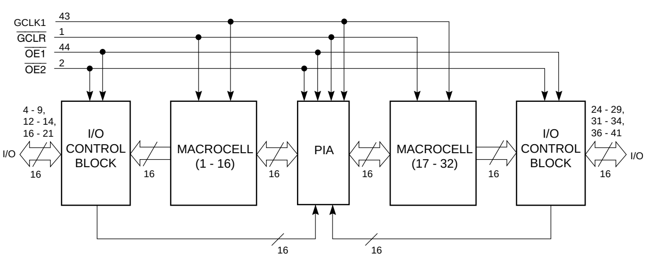
EPM7032SLC44-10(05) (ALTERA)

PROGRAMMABLE LOGIC DEVICE

—TOP VIEW—



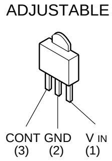
PIN NO.	I/O	SIGNAL	PIN NO.	I/O	SIGNAL	PIN NO.	I/O	SIGNAL	PIN NO.	I/O	SIGNAL
1	I	INPUT/$\overline{\text{GCLR}}$	12	I/O	I/O	23	—	Vcc	34	I/O	I/O
2	I	INPUT/$\overline{\text{OE2}}$	13	I/O	I/O (TMS)	24	I/O	I/O	35	—	Vcc
3	—	Vcc	14	I/O	I/O	25	I/O	I/O	36	I/O	I/O
4	I/O	I/O	15	—	Vcc	26	I/O	I/O	37	I/O	I/O
5	I/O	I/O	16	I/O	I/O	27	I/O	I/O	38	I/O	I/O (TDO)
6	I/O	I/O	17	I/O	I/O	28	I/O	I/O	39	I/O	I/O
7	I/O	I/O (TDI)	18	I/O	I/O	29	I/O	I/O	40	I/O	I/O
8	I/O	I/O	19	I/O	I/O	30	—	GND	41	I/O	I/O
9	I/O	I/O	20	I/O	I/O	31	I/O	I/O	42	—	GND
10	—	GND	21	I/O	I/O	32	I/O	I/O (TCK)	43	I	INPUT/GCLK1
11	—	Vcc	22	—	GND	33	I/O	I/O	44	I	INPUT/$\overline{\text{OE1}}$

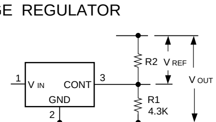


✻ABOVE DIAGRAM SHOWS CONDITIONS BEFORE PROGRAMMING

M5237M-TP1
M5237ML (MITSUBISHI)

ADJUSTABLE VOLTAGE REGULATOR





V_{IN} = 3.5V to 36V

V_{OUT} = 1.5V to 33V

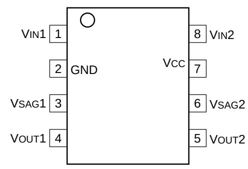
$V_{OUT} = V_{REF}\ (1+\frac{R2}{R1}) \fallingdotseq 1.26x\ (1+\frac{R2}{4.3})$ (V)

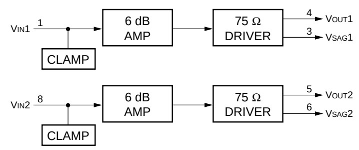
(R1 = 4.3KΩ, $V_{REF} \fallingdotseq$ 1.26V)

NJM2267M (JRC)
NJM2267M(TE2)

6 dB VIDEO AMPLIFIER

—TOP VIEW—

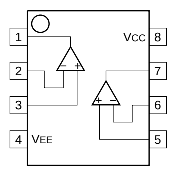




TL082CPS-E20 (TI)
TL082M (RAYTHEON)

DUAL OPERATIONAL AMPLIFIERS (DUAL-SUPPLY TYPE)

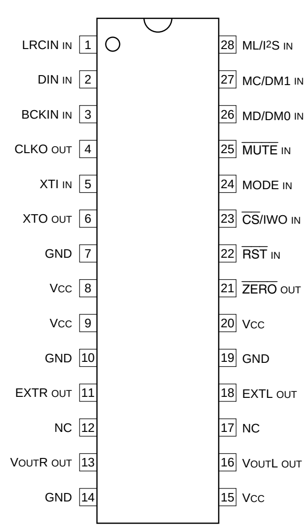
—TOP VIEW—



PCM1716E-BT2 (BURR-BROWN)

24-BIT AUDIO DA CONVERTER

—TOP VIEW—



INPUTS

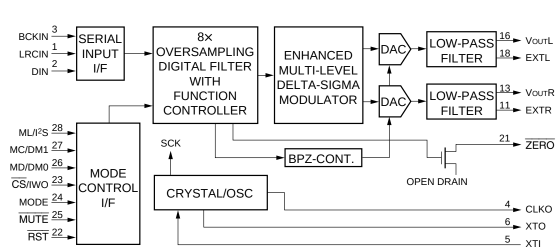
- BCKIN : BIT CLOCK
- $\overline{\text{CS}}$/IWO : CHIP SELECT/ INPUT FORMAT SELECTION
- DIN : SERIAL AUDIO DATA
- LRCIN : LEFT AND RIGHT CLOCK
- MC/DM1 : MODE CONTROL, BCK/ DE-EMPHASIS SELECTION 2
- MD/DM0 : MODE CONTROL, DATA/ DE-EMPHASIS SELECTION 1
- ML/I^{2}S : MODE CONTROL, WDCK/ INPUT FORMAT SELECTION
- MODE : MODE CONTROL SELECT
- $\overline{\text{MUTE}}$: MUTE CONTROL
- $\overline{\text{RST}}$: RESET
- XTI : OSCILLATOR

OUTPUTS

- CLKO : SYSTEM CLOCK
- EXTL : COMMON PIN OF ANALOG OUTPUT AMPLIFIER
- EXTR : COMMON PIN OF ANALOG OUTPUT AMPLIFIER
- VoutL : ANALOG VOLTAGE (L-CH)
- VoutR : ANALOG VOLTAGE (R-CH)
- XTO : OSCILLATOR
- $\overline{\text{ZERO}}$: ZERO DATA FLAG

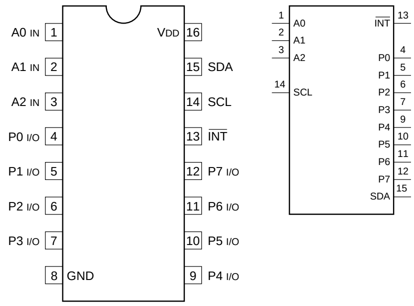
OTHER

- NC : NO CONNECTION



PCF8574AT (PHILIPS)

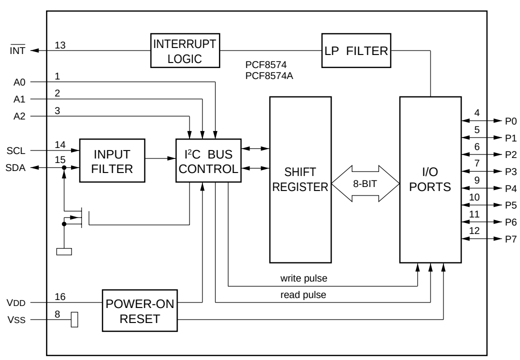
C-MOS REMOTE 8-BIT I/O EXPANDER
—TOP VIEW—



INPUT
A0 - A2 ; ADDRESS INPUTS
SCL ; SYSTEM CLOCK LINE

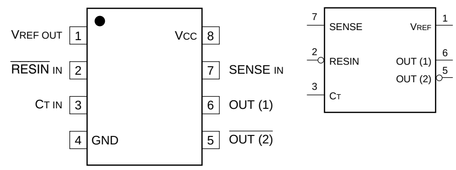
OUTPUT
INT ; INTERRUPT OUTPUT
SDA ; SERIAL DATA LINE

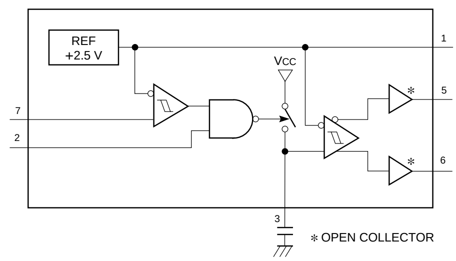
INPUT/OUTPUT
P0 - P7 ; 8-BIT QUASI-BIDIRECTIONAL I/O PORT



TL7705ACPS (TI)
TL7705ACPSR

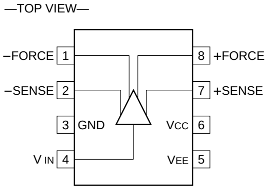
POWER VOLTAGE SUPERVISOR
—TOP VIEW—



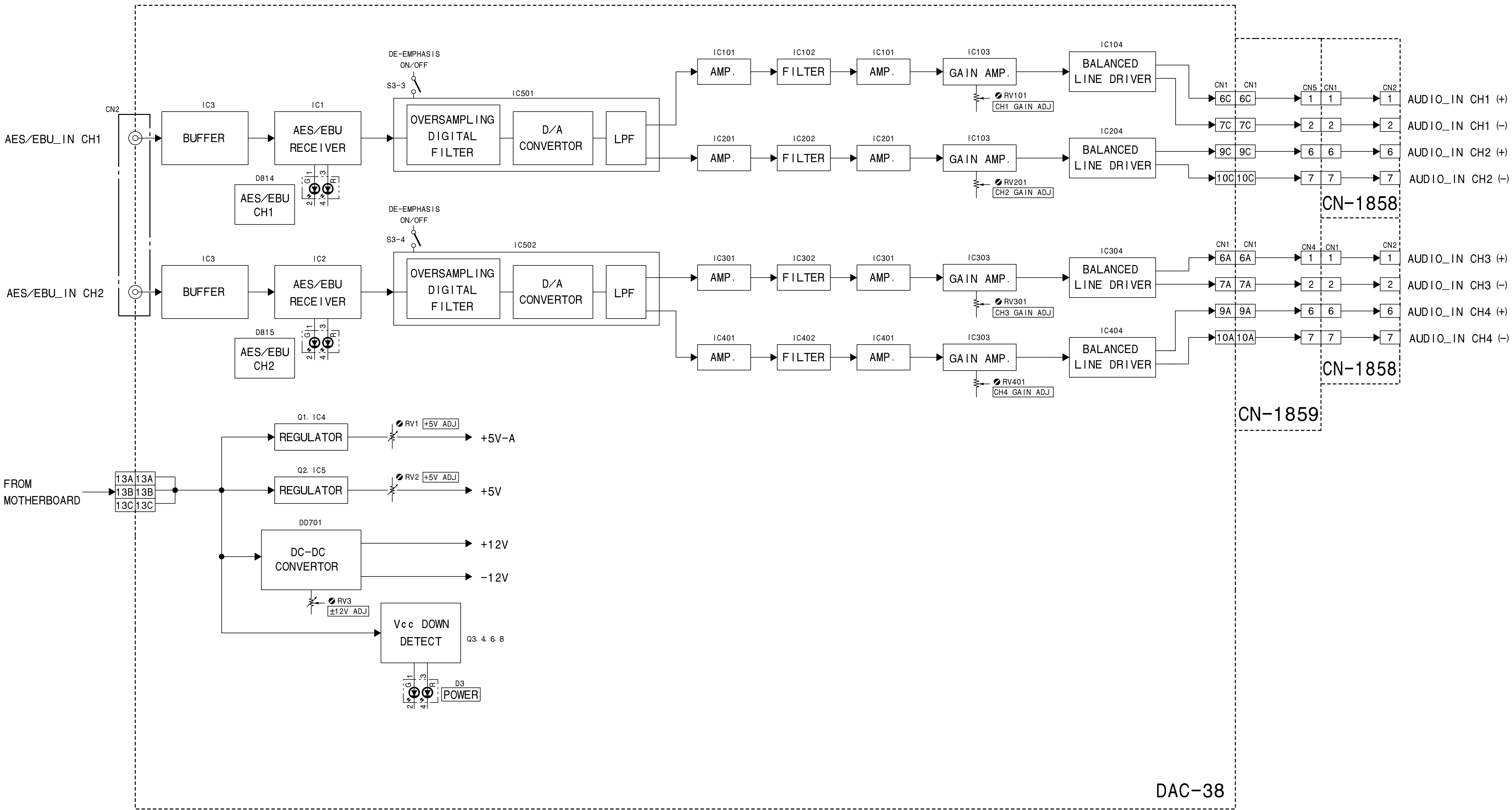


SSM-2142P (PMI)

BALANCED LINE DRIVER
—TOP VIEW—



Section 5
Block Diagram

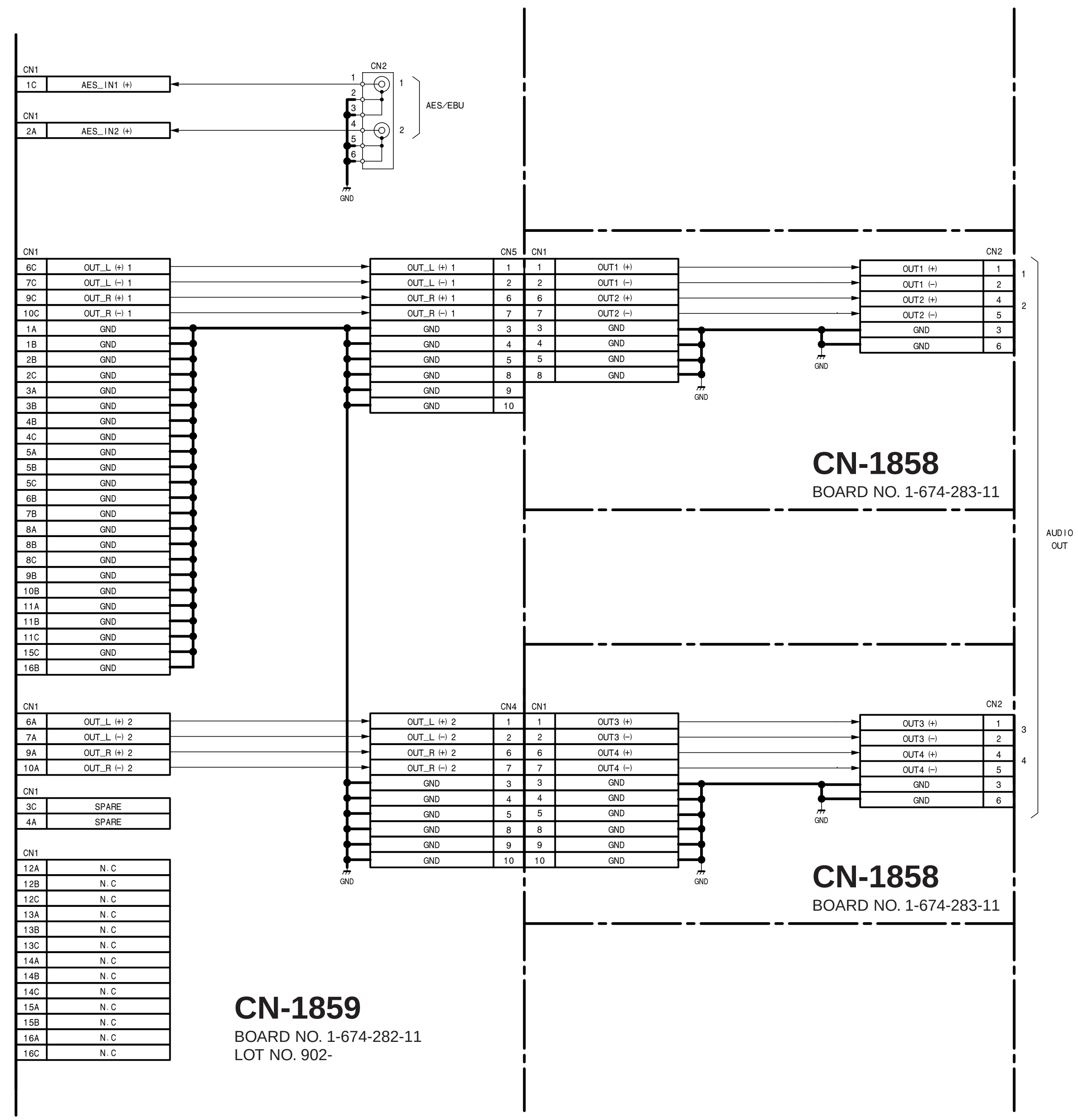


Section 6
Schematic Diagrams

Index

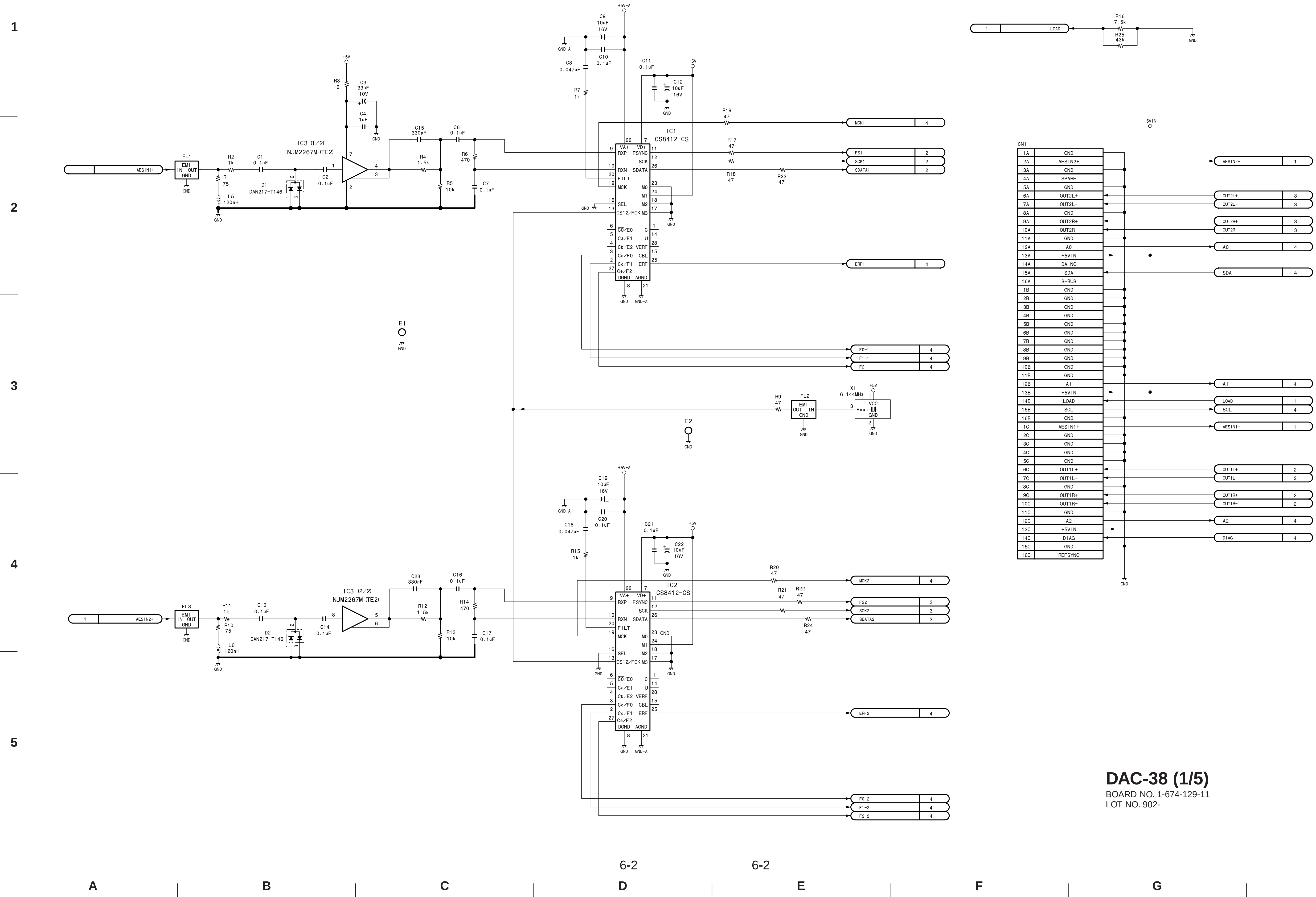
Board Name	Function	Page
CN-1858/1859 Boards	Connector Board	6-1
DAC-38 Board	Audio D/A Converter Board	6-2

BKPF-L752 (SY) : S/N 10001 and Higher



 DAC-38 (1/5)

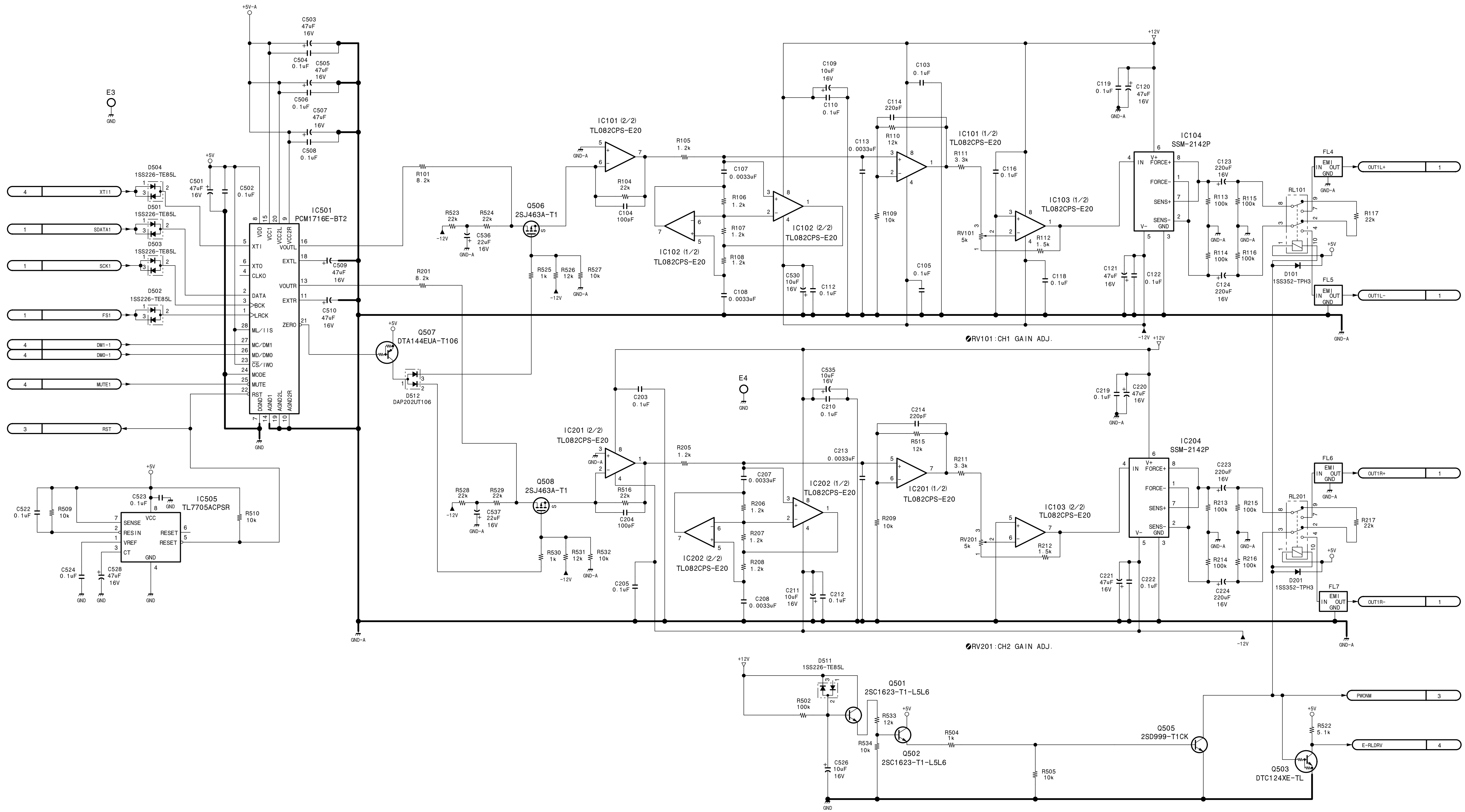
BKPF-L752 (SY) : S/N 10001 and Higher



DAC-38 (1/5)
BOARD NO. 1-674-129-11
LOT NO. 902-

BKPF-L752 (SY) : S/N 10001 and Higher

1
2
3
4
5



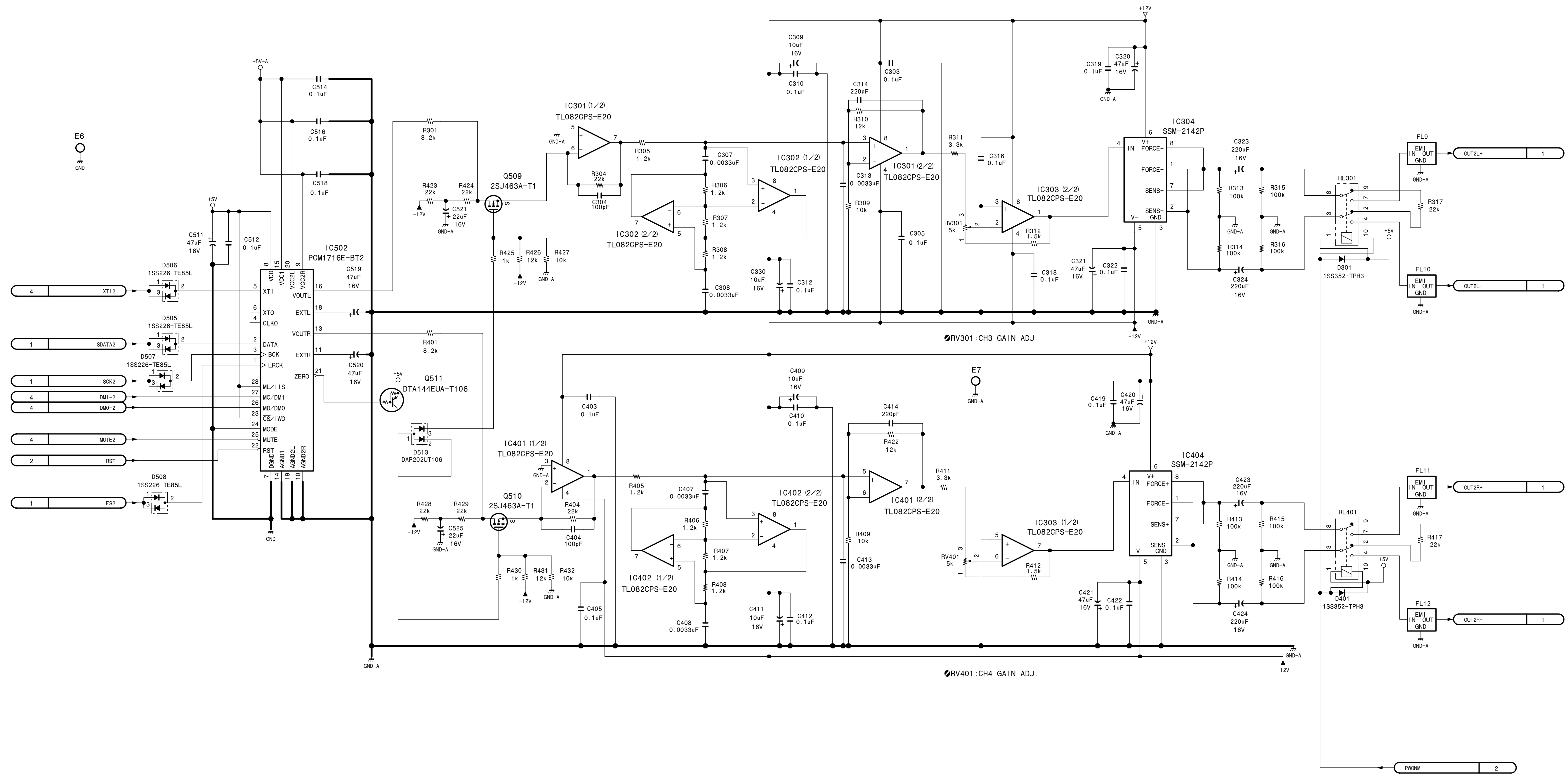
DAC-38 (2/5)

BOARD NO. 1-674-129-11
LOT NO. 902-

A B C D E F G H

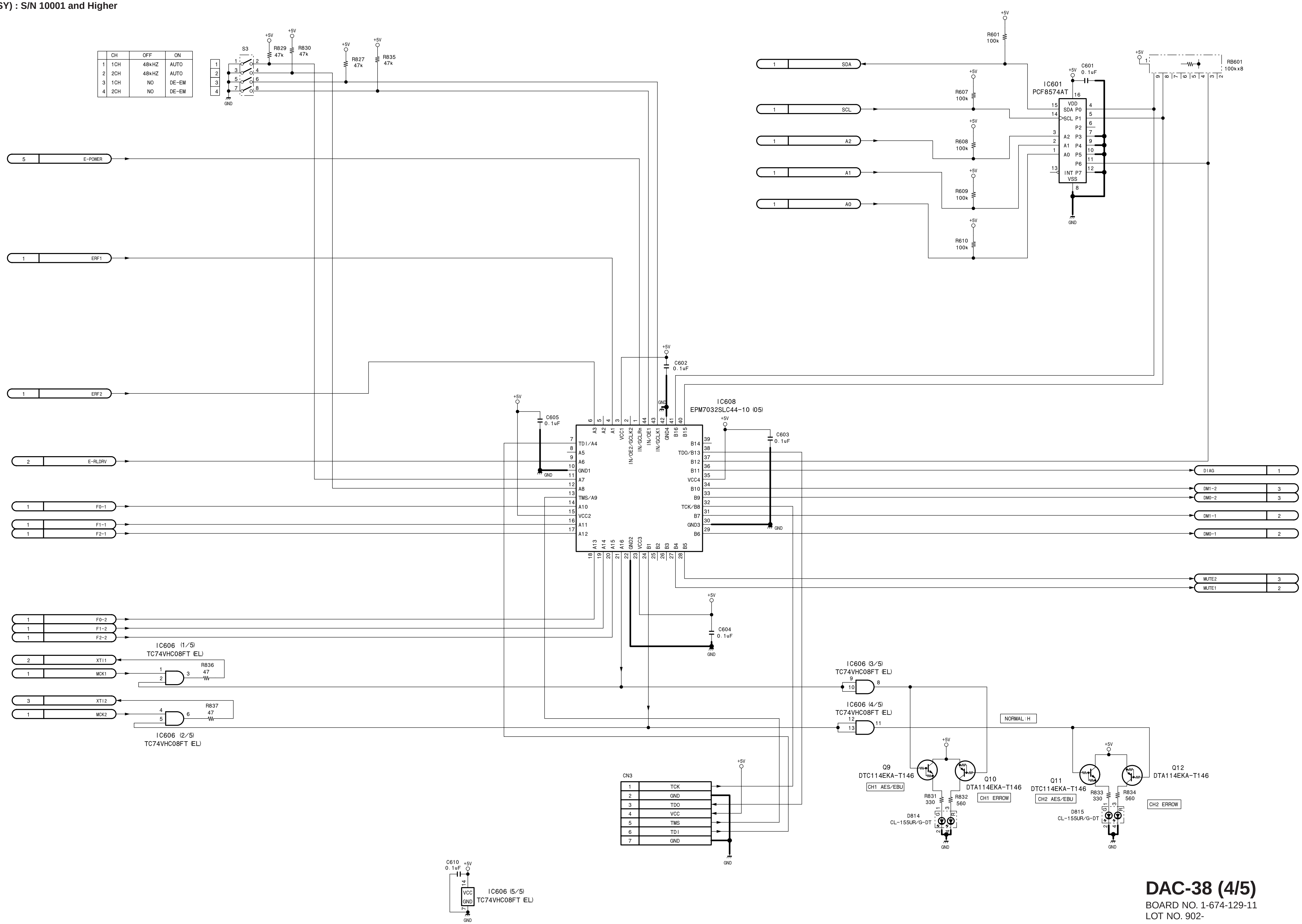
 DAC-38 (3/5)

BKPF-L752 (SY) : S/N 10001 and Higher



DAC-38 (3/5)
BOARD NO. 1-674-129-11
LOT NO. 902-

BKPF-L752 (SY) : S/N 10001 and Higher



DAC-38 (4/5)
BOARD NO. 1-674-129-11
LOT NO. 902-

BKPF-L752 (SY) : S/N 10001 and Higher

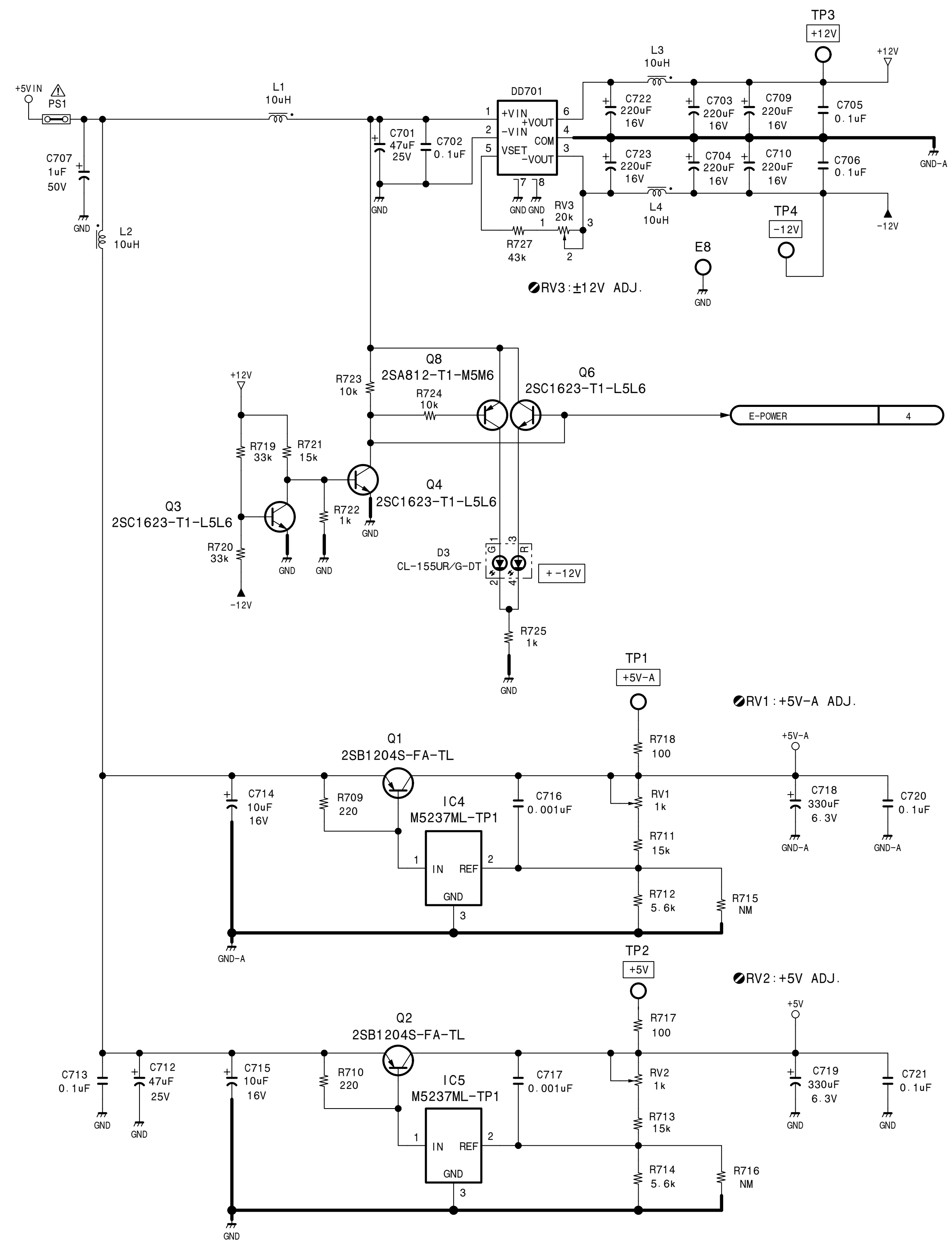
1

2

3

4

5

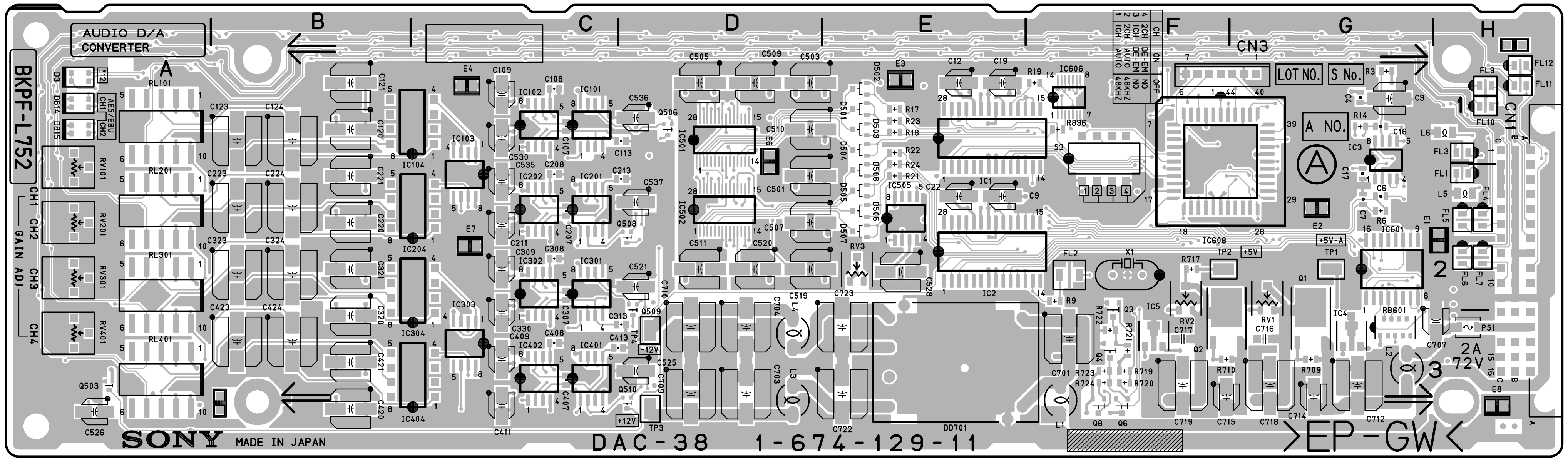


DAC-38 (5/5)

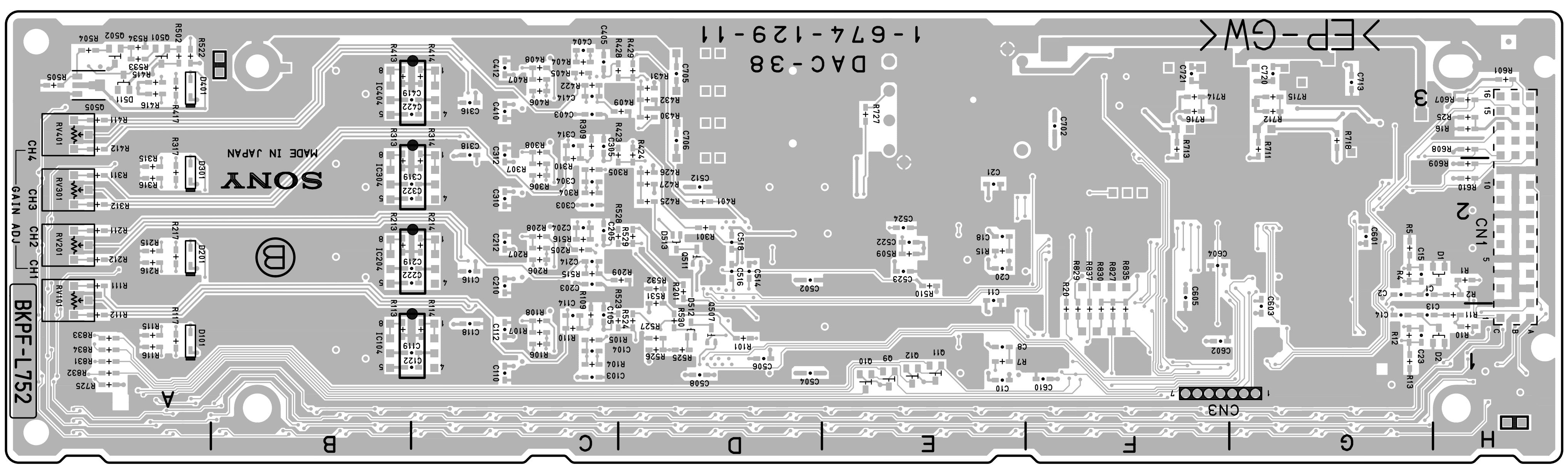
BOARD NO. 1-674-129-11

LOT NO. 902-

Section 7
Board Layout



DAC-38 -A SIDE-
SUFFIX: -11



BKPF-L752 (SY) : S/N 10001 and Higher

DAC-38 -B SIDE-
SUFFIX: -11

DAC-38(1-674-129-11)
----
*:B SIDE

C1	*G2	C421	B3	E4	C1	R18	E1	R532	*D2
C2	*G2	C422	*C3	E6	D2	R19	F1	R601	*H3
C3	G1	C423	B3	E7	C2	R20	*F1	R607	*H3
C4	G1	C424	B3	E8	H3	R21	E2	R608	*H3
C6	G2	C501	D2			R22	E1	R609	*H2
C7	G2	C502	*D2	FL1	H2	R23	E1	R610	*H2
C8	*E1	C503	D1	FL2	F2	R24	E2	R709	G3
C9	E2	C504	*D1	FL3	H1	R101	*D1	R710	F3
C10	*E1	C505	D1	FL4	H2	R104	*C1	R711	*G3
C11	*E2	C506	*D1	FL5	H2	R105	*C1	R712	*G3
C12	E1	C507	D2	FL6	H2	R106	*C1	R713	*F3
C13	*G1	C508	*D1	FL7	H2	R107	*C1	R714	*F3
C14	*G1	C509	D1	FL9	H1	R108	*C1	R715	*G3
C15	*G2	C510	D1	FL10	H1	R109	*D1	R716	*F3
C16	G1	C511	D2	FL11	H1	R110	*C1	R717	F2
C17	G2	C512	*D2	FL12	H1	R111	*C1	R718	*G3
C18	*E2	C514	*D2			R112	*A1	R719	F3
C19	E1	C516	*D2	IC1	E2	R113	*B2	R720	F3
C20	*E2	C518	*D2	IC2	E2	R114	*C2	R721	F3
C21	*E2	C519	D2	IC3	G2	R115	*A1	R722	F3
C22	E2	C520	D2	IC4	G3	R116	*A1	R723	F3
C23	*G1	C521	D2	IC5	F3	R117	*A1	R724	F3
C103	*C1	C522	*E2	IC101	C1	R201	*D1	R725	*A1
C104	*C2	C523	*E2	IC102	C1	R205	*C2	R727	*E3
C105	*C1	C524	*E2	IC103	C1	R206	*C2	R827	*F1
C107	C1	C525	D3	IC104	C1	R207	*C2	R829	*F1
C108	C1	C526	A3	IC201	C2	R208	*C2	R830	*F1
C109	C1	C528	E2	IC202	C2	R209	*D2	R831	*A1
C110	*C1	C530	C1	IC203	C2	R211	*C2	R832	*A1
C112	*C1	C535	C2	IC204	C2	R212	*A2	R833	*A1
C113	C1	C536	D1	IC301	C3	R213	*B2	R834	*A1
C114	*C1	C537	D2	IC302	C3	R214	*C2	R835	*F1
C116	*C1	C601	*G2	IC303	C3	R215	*A2	R836	F1
C118	*C1	C602	*F1	IC304	C3	R216	*A2	R837	*F1
C119	*C1	C603	*G1	IC401	C3	R217	*A2		
C120	B1	C604	*F2	IC402	C3	R301	*D2	RB601	G3
C121	B1	C605	*F2	IC403	C3	R304	*C3		
C122	*C1	C607	*G1	IC404	C3	R305	*C2	RL101	A1
C123	B1	C608	*G1	IC501	D1	R306	*C2	RL201	A2
C124	B1	C609	*G2	IC502	D2	R307	*C2	RL301	A2
C203	*C2	C610	*F1	IC505	E2	R308	*C3	RL401	A3
C204	*C2	C701	F3	IC601	G2	R309	*D2		
C205	*C2	C702	*F3	IC603	G1	R310	*C2	RV1	G2
C207	C2	C703	D3	IC604	G2	R311	*C2	RV2	F2
C208	C2	C704	D3	IC606	F1	R312	*A2	RV3	E2
C210	*C2	C705	*D3	IC608	F1	R313	*B3	RV101	A2
C211	C2	C706	*D3	IC609	G2	R314	*C3	RV201	A2
C212	*C2	C707	H3			R315	*A2	RV301	A2
C213	C2	C709	D3	L1	F3	R316	*A2	RV401	A3
C214	*C2	C710	D3	L2	G3	R317	*A2		
C216	*C2	C712	G3	L3	D3	R401	*D2	S3	F1
C218	*C2	C713	*G3	L4	D3	R404	*C3		
C219	*C2	C714	G3			R405	*C3	SL1	D2
C220	B2	C715	F3	PS1	H3	R406	*C3		
C221	B2	C716	G3			R407	*C3	TP1	G2
C222	*C2	C717	F3	Q1	G3	R408	*C3	TP2	F2
C223	B2	C718	G3	Q2	F3	R409	*D3	TP3	D3
C224	B2	C719	F3	Q3	F2	R411	*C3	TP4	D3
C303	*C2	C720	*G3	Q4	F3	R412	*A2		
C304	*C3	C721	*F3	Q6	F3	R413	*B3	X1	F2
C305	*C3	C722	E3	Q8	F3	R414	*C3		
C307	C2	C723	E3	Q9	*E1	R415	*A3		
C308	C2			Q10	*E1	R416	*A3		
C309	C2	CN1	H2	Q11	*E1	R417	*A3		
C310	*C2	CN3	F1	Q12	*E1	R422	*C3		
C312	*C3			Q501	*A3	R423	*C3		
C313	C2	D1	*H2	Q502	*A3	R424	*D3		
C314	*C2	D2	*H1	Q503	A3	R425	*D2		
C316	*C2	D3	A1	Q505	*A3	R426	*D2		
C318	*C3	D101	*A1	Q506	D1	R427	*D2		
C319	*C2	D201	*A2	Q507	*D1	R428	*C3		
C320	B3	D301	*A2	Q508	D2	R429	*D3		
C321	B2	D401	*A3	Q509	D3	R430	*D3		
C322	*C2	D501	E1	Q510	D3	R431	*D3		
C323	B2	D502	E1	Q511	*D2	R432	*D3		
C324	B2	D503	E1			R502	*A3		
C330	C3	D504	E1	R1	*H2	R504	*A3		
C403	*C3	D505	E2	R2	*H2	R505	*A3		
C404	*C3	D506	E2	R3	G1	R509	*E2		
C405	*C3	D507	E2	R4	*G2	R510	*E2		
C407	C3	D508	E2	R5	*G2	R515	*C2		
C408	C3	D511	*A3	R6	G2	R516	*C2		
C409	C3	D512	*D1	R7	*E1	R522	*A3		
C410	*C3	D513	*D2	R9	F2	R523	*C1		
C411	C3	D814	A1	R10	*H1	R524	*D1		
C412	*C3	D815	A1	R11	*H1	R525	*D1		
C413	C3			R12	*G1	R526	*D1		
C414	*C3	DD701	E3	R13	*G1	R527	*D1		
C416	*C3			R14	G1	R528	*C2		
C418	*C3	E1	H2	R15	*E2	R529	*D2		
C419	*C3	E2	F2	R16	*H3	R530	*D1		
C420	B3	E3	E1	R17	E1	R531	*D2		

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